

MEDICATIONS

AEROMEDICAL CONCERNS: With their rapid evolution in dosages, indications and complications, medications make for an extremely dynamic topic in aviation medicine. Guidance in this area must be scrutinized on a far more regular basis than other Aeromedical Policy Letters (APLs). Readers/users of this information are strongly urged to contact the ATC Mobile Aviation Medicine Standardization Officer or CG-1121 for questions, concerns or recommendations on this topic.

Aircrew-members should be evaluated for restriction from flying duties when initiating any medication and also be advised of potential side effects. When using a medication, the following should be considered: (1) is the medication and/or the underlying medical condition compatible with aviation duty, (2) is the medication effective and essential to treatment, and (3) is the aircrew member free of aeromedically significant side effects after a reasonable observation period.

WAIVERS: CG-11 has reviewed and classified a wide range of medications for use in the aviation environment. Medications are designated Class 1, 2A, 2B, 3 and 4. Medications not on this list are currently incompatible with the aviation environment or little information regarding its safe use in the aviation environment exists. New medications are reviewed regularly and waiver requests are considered on a case- by-case basis. Flight surgeons are encouraged to use the medications on this list to avoid delays in the waiver action process.

Class 1: Over-the-counter medications which may be used without a waiver. Occasional and infrequent use of these over-the-counter medications does not pose a risk to aviation safety, they are approved for acute non-disqualifying conditions, and do not require a waiver. They must be used as intended and in accordance with standard prescribing practices. For example, pseudoephedrine is intended for the treatment of mild nasal congestion and should not be taken in an effort to combat fatigue.

Class 2A: These medications require a prescription and may be used short term under the supervision of a flight surgeon without a waiver. CAUTION: The underlying medical condition may be disqualifying and require a waiver.

Class 2B: These medications require a prescription and may be used for short-term or chronic use under the supervision of a flight surgeon without a waiver. CAUTION: The underlying condition may require a waiver. These medications must be noted annually on the FDME as 'Information Only' and the flight surgeon must comment on usage and dosage. First time use requires an initial 24-hour grounding period to ensure the aircrew member is free of significant side effects. Subsequent use does not require grounding.

Class 3: These medications require a prescription and may receive favorable waiver recommendation on an individual basis for treatment or control of certain chronic conditions. The underlying disease process may also require a waiver.

Class 4: Use of these medications necessitates grounding the aviator and is not waiverable for flying duty. The majority of herbal preparations/supplements are prohibited for aviation duty and considered class 4. However, some of these preparations may be used under the guidance of a flight surgeon.

INFORMATION REQUIRED:

Aeromedical Summary (AMS) must list:

1. Dosage
2. Frequency of use
3. Any side effects
4. Complete summary of the aircrew-member's medical condition.
5. If a drug not currently authorized (or prohibited) is being recommended, forward a complete justification of the medication, i.e., rationale for use, safety considerations, availability of the drug during mobilization of the unit, and any studies supporting its use in the aviation environment.

FOLLOW-UP: Appropriate follow-up is predicated upon the specific medication and the underlying medical condition. These requirements are given under specific reference to the applicable medication or medical condition.

TREATMENT: N/A

DISCUSSION: Medication side effects are very hard to predict. They occur with irregularity and often differently in any given population group. The side effects relating to central nervous, cardiogenic, ophthalmologic, and labyrinthine systems are understandably the most troubling in the aircrew member. One must also consider the unique environmental considerations present in the aviation environment, i.e., G-forces, hypoxia, pressure changes, noise, heat, cold, acute and chronic fatigue; and how these effect the medication or the underlying medical condition.

Class 1: Over-the-counter medications which may be used without a waiver.

AEROMEDICAL CONCERNS: Self-medication in anyone on flight status is prohibited. Over-the-counter (OTC) medications frequently are combination medications, with one or more components contra-indicated for safety of flight. Many OTC medications do not provide a listing of ingredients on the package and frequently provide limited information about side effects. While use of the OTC medication may not require grounding, the underlying condition being treated should also warrant consideration for possible Duties Not Including Flight (DNIF).

WAIVER: The OTC medications listed below are Class 1 medications. If a flight surgeon is not immediately available, the below listed medications can be used on a short term basis until a flight surgeon can be seen for appropriate evaluation and treatment. Medication taken for relief of any symptom is only authorized when used occasionally or infrequently, complete relief is achieved without side effects, and use is not intended as a means to remain in flight status unless authorized by a flight surgeon (as the underlying condition being treated may pose risk to safe flight). Combination medications are acceptable only when each component in the combination is separately acceptable. Any prohibited component makes the combination a prohibited medication.

- **ANTACIDS:** (*Tums, Roloids, Mylanta, Maalox, Gaviscon, etc.*) Chronic use is Class 3.
- **ANTI-HISTAMINES:** *Loratidine (Claritin)/Fexofenadine (Allegra)*-Short term use by individual aircrew is authorized, but the aircrew member must report use of this medication to the FS/APA as soon as possible. FS/APA should be concerned not only

with the use of this medication but also the underlying problem that the individual is self-treating (e.g. allergic rhinitis) and any aeromedical implications of the diagnosis.

- **ARTIFICIAL TEARS:** Saline or other lubricating solution only. Visine or other vasoconstrictor agents are prohibited for aviation duty.
- **ASPIRIN/ACETOMINOPHEN/IBUPROFEN:** When used infrequently or in low dosage.
- **COUGH SYRUP/LOZENGES:** [*Guaifenesin only (Robitussin plain)*]. Many OTC cough syrups contain sedating antihistamines or *Dextromethorphan (DM)* and are prohibited for aviation duty.
- **ORAL DECONGESTANTS:** *Pseudoephedrine (Sudafed)*, *Phenylephrine*, . When used for mild nasal congestion in the presence of normal ventilation of the sinuses, and middle ears (normal valsalva). Should not be combined with decongestant nasal spray(s). Does not include pre-flight use to relieve ear or sinus block, thereby enabling flight..
- **PEPTO BISMOL:** If used for minor diarrhea (without dehydration) conditions and free of side effects for 24 hours.
- **MULTIVITAMINS:** When used in normal supplemental doses. Mega-dose prescriptions or individual vitamin preparations are excluded and addressed in Class 4.
- **NASAL SPRAYS:** Saline nasal sprays are acceptable without restriction. *Phenylephrine HCL (Neosynephrine)* and *oxymetazoline (Afrin)* are restricted to no more than 3 days. Use of phenylephrine or oxymetazoline for longer than the above time must be validated and approved by a flight surgeon. Recurrent need for nasal sprays must be evaluated by the flight surgeon.
- **PSYLLIUM MUCILLIOD:** (*Metamucil*). When used to treat occasional constipation or as a fiber source for dietary reasons. Long term use (over 1 week) must be coordinated with the flight surgeon due to possible side effects such as esophageal/bowel obstructions.
- **THROAT LOZENGES:** Acceptable provided the lozenge contains no prohibited medication. *Benzocaine* (or similar analgesic) containing throat spray or lozenge is acceptable. Long term use (more than 3 days) must be approved by the local flight surgeon.

DISCUSSION: The aviator requires constant alertness with full use of all of his senses and reasoning powers. OTC Medications may interact negatively with prescribed medications, resulting in impairment of the aviator. Many OTC medications as well as most prescribed medications cause sedation, blurred vision, disruptions of vestibular function, etc. Often the condition for which the medication is used is mild; however, it can produce very subtle effects which may also be detrimental in the flight environment. Just like the subtle deterioration of cognitive ability that occurs with hypoxia and alcohol intoxication, medication effects may not be appreciated by the individual taking the medicine. These effects may have disastrous results in situations requiring full alertness and rapid reflexes.

Class 2A: Require a prescription and may be used without a waiver for short periods under the supervision of a flight surgeon.

AEROMEDICAL CONCERNS: Certain medications, available by prescription only, have proven to be quite safe in the aviation environment. When dispensed and their usage monitored

by flight surgeons, these medications have been quite effective in returning aviators more rapidly to their respective flying positions. While generally safe, one still must take into consideration the underlying medical condition and the ever present possibility of side effects.

WAIVERS: No waiver is required, especially if the medications are used on a short term basis. Occasionally the underlying health condition requires a waiver; and if the medication is required on a frequent or maintenance basis, a waiver may also be needed.

- **ANTIHISTAMINES:**
DESLOMATIDINE (Clarinet) - Class 2A Authorized for seasonal/allergic rhinitis
- **ANTIMICROBIALS:**
AUGMENTIN (Amoxicillin/Clavulanate), BACTRIM/SEPTRA, CEPHALOSPORINS, CHLOROQUINE (Aralen) or CHLOROQUINE/PRIMAQUINE, CLINDAMYCIN (caution: Pseudomembranous colitis), ERYTHROMYCINS to include Azithromycin and Clarithromycin, ETHAMBUTOL HYDROCHLORIDE (Myambutol) (monitor serum uric acid during treatment), METRONIDAZOLE (Flagyl), NITROFURANTOIN (Macrodan/Macrobid) (watch for pneumonitis or peripheral neuropathy), PENICILLINS, QUINOLONES (many potential drug interactions), RIFAMPIN (Rifadin), TETRACYCLINES, DOXYCYCLINE (Vibramycin) for prophylaxis - includes malaria or leptospirosis)
- **ANTIFUNGALS:**
FLUCONAZOLE (Diflucan)
- **ANTIVIRALS:**
ACYCLOVIR (Zovirax), VALACYCLOVIR (Valtrex), and FAMCYCLOVIR (Famvir)
- **GI MEDICATIONS:**
CALCIUM POLYCARBOPHIL (FiberCon), LOPERAMIDE (Imodium) (when medical condition is not a factor and free of side effects for 24 hours), SUCRALFATE (Carafate) (providing underlying condition does not require waiver.) Other medications are Class 1 or Class 3.
- **PROPHYLAXIS AGENTS:** Class 2A when used for prophylaxis. These medications must be prescribed by a flight surgeon or under a protocol reviewed by the flight surgeon.

Diarrheal Prophylaxis: In general (especially when periods of risk exceed 3 weeks) early treatment is preferable to prophylaxis. CIPROFLOXACIN (Cipro) 500 mg q.d., or BISMUTH SUBSALICYLATE 2 tablets q.i.d., or TRIMETHOPRIM/SULFAMETHOXAZONE DS (Bactrim DS) 1 tablet q.d. are acceptable forms of prophylaxis. Geographic microbial resistance to specific drug regimens may limit the effectiveness of antibiotic prophylaxis.

Leptospirosis Prophylaxis: DOXYCYCLINE 200 mg weekly during and one week following exposure.

Malarial Prophylaxis: CHLOROQUINE PHOSPHATE 500 mg weekly or DOXYCYCLINE (Vibramycin) 100 mg daily (including pre- and post-exposure periods, as indicated). PRIMAQUINE PHOSPHATE 26.3 mg daily for 14 days is required for terminal prophylaxis after leaving areas where P.Vivax and/or P.Ovale are present. SULFADOXINE/PYRIMETHAMINE is a treatment medication, not prophylaxis, and cannot be used without temporarily grounding the aviator. MEFLOQUINE 250 mg weekly may be used ONLY when CHLOROQUINE resistance is known and DOXYCYCLINE is contraindicated due to allergy and only when monitored closely by a flight surgeon. (Note: Recommendations for malarial prophylaxis change frequently due to the variability of susceptibility of the organism to treatment. Prior to deployment to an endemic area the latest recommendations should be obtained using such sources as the Armed Forces Medical Intelligence Center (AFMIC), Fort Detrick at 1-301-619-7574 (DSN 343) or <http://mic.afmic.detrack.army.mil> ; or the Center for Disease Control (CDC) at Traveler's Hotline 1-877-394-8747; or at www.cdc.gov or at the US Army Center for Health Promotion and Preventive Medicine at <http://chppm-www.apgea.army.mil> . Consult with CG-1121 Preventive Medicine Officer when unclear or if guidance sources conflict.

Subacute Bacterial Endocarditis Prophylaxis: Penicillin, Amoxicillin, Ampicillin, Clindamycin, Azithromycin, Clarithromycin, or Cephalosporins may be used in appropriate doses and when indicated. (See *Prevention of Bacterial Endocarditis. Recommendations by the American Heart Association*. JAMA 1997; 277 (22): 1794-801.)

Tuberculosis Prophylaxis: After documentation of skin test conversion, a course of PYRIDOXINE (Vitamin B6) 50 mg daily accompanying a CDC-recommended ISONIAZID (INH) course of therapy is an acceptable prophylaxis, unless INH resistance is likely. The treated aviator must also be followed in a Tuberculosis Surveillance Program. See Class 2B Antimicrobials, Antifungals and Antivirals for documentation of use of ISONIAZID.

- **TOPICAL PREPARATIONS:**

Topical preparations are generally Class 2A due to the minimal systemic absorption of most. Remember that the underlying condition may require a waiver. Use of any topical preparation does require evaluation for systemic effects. Topical MINOXIDIL 2% & 5% for use in male pattern hair loss is Class 2A.

Class 2B: Require a prescription and may be used for short-term or chronic use under the supervision of a flight surgeon without a waiver

AEROMEDICAL CONCERNS: This classification of drugs still requires a prescription and is used under the supervision of the flight surgeon. Unlike Class 2A, they are often employed for

chronic, long term use and more likely to be used for underlying medical conditions which require a waiver. They also have greater potential for side effects, so all must have a non-flying period of observation of at least 24 hours.

WAIVERS: Use of these drugs requires they be coded as Information Only. No medication waiver is required, though a medical condition waiver may be necessary.

INFORMATION REQUIRED: All drugs in this Class require comment on dosage and usage. They may also require other periodic follow-up specifically indicated for each drug (see below).

ALLERGIC RHINITIS AGENTS: (See [Allergic/Non-allergic Rhinitis APL](#))

- **Antihistamines:** Fexofenadine (Allegra), and Loratadine (Claritin), Desloratidine (Clarinex). All other antihistamines are Class 4 [nonwaiverable], including Cetirizine (Zyrtec).
- **Intranasal Steroids:** Dexamethasone (Dexacort), Flunisolide (Nasarel or Nasalide), Beclomethasone (Beconase, Beconase AQ, Vancenase, Vancenase AQ DS), Budesonide (Rhinocort), and Triamcinolone (Nasacort or Nasacort AQ), Fluticasone (Flonase), and Mometasone (Nasonex). This is the recommended first line treatment for moderate disease.
- **Intranasal Anticholinergics:** Ipratropium bromide (Atrovent) 0.03% nasal spray is effective when rhinorrhea is the predominant symptom. It is not very helpful for relieving congestion, itchy watery eyes or sneezing.
- **Mast Cell stabilizers:** Cromolyn sodium (Nasalcrom) is effective, but requires frequent (qid) dosing.

ANTI-HYPERLIPIDEMICS: (See [Hyperlipidemia/Hypercholesterolemia APL](#))

- **HMG CoA Reductase Inhibitors (Statins):** LOVASTATIN, PRAVASTATIN, SIMVASTATIN, ATORVASTATIN, FLUVASTATIN, and ROSUVASTATIN. Prior to treatment initiation, check hepatic enzymes and thereafter when clinically indicated.
- **Ferric Acids:** GEMFIBROZIL, FENOFIBRATE. Prior to initiating treatment and at 3, 6, and 9 months, then annually, do LFTs to include bilirubin and LDH, CPK, CBC and complete Lipid Profile. (Hypersensitivity, hepatic dysfunction, dizziness, depression and blurred vision have been reported).
- **Bile-Acid Binding Resins:** CHOLESTYRAMINE, COLESTIPOL. Submit prothrombin time and serum calcium annually. (These drugs cause constipation and interact with such drugs as hydrochlorothiazide, penicillin and tetracycline. Additionally, they may cause Vitamin K deficiency and subsequent hypoprothrombinemia).

ANTIMICROBIALS, ANTIFUNGALS, AND ANTIVIRALS:

Chronic use of all antibiotics fit within this classification. Use of Antifungals or Antivirals (Amantadine) require annual reporting of AST (SGOT), ALT (SGPT), Alkaline Phosphatase, Total Bilirubin, BUN, Creatine, and CBC on FDME. Abnormal values require flight surgeon

comments. Pulse antifungal therapy for onychomycosis requires baseline LFTs and a recheck 6 weeks after start of therapy.

GI MEDICATIONS:

- **Antacids** - Check electrolytes when used chronically.
- **H2 Blocker** - CIMETIDINE (Tagamet), RANITIDINE (Zantac), FAMOTIDINE (Pepcid), NIZATIDINE (Axid)): Occasional drowsiness is associated with these medications. When treatment is first initiated, a 72-hour non-flying observation is required to ensure the absence of any significant side effect.
- **Proton Pump Inhibitor** - Omeprazole (Prilosec), Lansoprazole (Prevacid), Pantoprazole (Protonix), Rabeprazole (Aciphex), and Esomeprazole (Nexium).
- **Sucralfate** - (Carafate)

HORMONAL PREPARATIONS:

ESTROGEN/PROGESTERONE preparations when used solely for contraception or replacement therapy following menopause or hysterectomy. Other hormonal drugs are Class 3.

NON-STEROIDAL ANTI-INFLAMMATORY AGENTS:

Chronic use of any NSAID requires a measurement of BUN and Creatinine every 6 months (with a single set completed within the previous 90 days) submitted with each annual FDME.

Additionally, stool for occult blood must be completed annually and documented on the annual FDME/FDHS. Persistent upper GI complaints necessitate grounding and upper GI evaluation for possible GI toxicity.

- **Acetic acids:** Diclofenac (Voltaren), Indomethacin (Indocin), Sulindac (Clinoril), Tolmentin (Tolectin)
- **Fenamates:** Meclofenamate, Mefenamic acid (Ponstel)
- **Naphthylalkanones:** Nambumetone (Relafen)
- **Oxicams:** Piroxicam (Feldene), Meloxicam (Mobic)
- **Propionic acids:** Fenoprofen (Nalfon), Flurbiprofen (Ansaid), Ibuprofen (Motrin), Ketoprofen (Orudis; Oruvail), Naproxen (Naprosyn; Anaprox), Oxaprozin (Daypro)
- **Pyranocarboxylic acid:** Etodolac (Lodine)
- **Pyrrolizine carboxylic acid:** Ketorolac (Toradol)

OTHER:

- **Finasteride (Propecia):** when used for hair loss; other usage is categorized as Class 3 medication.
- **Sildenafil (Viagra):** Individuals using this preparation are restricted from flying duties for 12 hours after use. As with all medications in this class, there is a risk for side effects so a 24 hour period of grounding and observation is required with the first dose. After this observation period, the aircrew may be returned to full flying duties. The FS/APA should be aware of the short-term visual disturbances that can occur in up to 5% of those using this medication. These visual disturbances include blue/green discrepancy, increased brightness of lights, and halos. Visual disturbances tend to occur at peak levels (1.5 hrs after use) and are not usually persistent. Individuals should be questioned about

visual changes and referred to an eye care specialist for persistent abnormalities. An information only note must be included in the FDME/FDHS detailing the reason for use and the completion of an evaluation for causes of erectile dysfunction. (e.g. after therapy for prostate cancer, medication side effects, drug or alcohol abuse, diabetes mellitus, hypertension, psychogenic factors, or hormonal problems including hypo/hyperthyroidism, hypogonadism and hyperprolactinemia, etc.).

Class 3: These medications require a prescription and may receive favorable waiver recommendation on an individual basis for treatment or control of certain chronic conditions

AEROMEDICAL CONCERNS: These medications are generally given for treatment of underlying conditions which require a waiver, may have significant side effects, or require significant evaluations as follow-up for safe use.

WAIVERS: May receive favorable waiver recommendation only on an individual basis for treatment or control of certain chronic conditions. The underlying disease process may also require a waiver. Other medications may be waivable upon complete presentation but often require extensive evaluation before approval.

INFORMATION REQUIRED: Complete AMS with full details of drug use and underlying condition is required. Specific requirements are given under each drug or drug category listed below. Other requirements as dictated by the underlying medical condition may also be added at the discretion of CG PSC-psd-med.

ANTI-HYPERLIPIDEMICS: (See [Hyperlipidemia/Hypercholesterolemia APL](#))

- **Nicotinic Acid:** NIACIN, NIASPAN. **Use of these agents is grounding and considered disqualifying.** Waivers will be considered after maximum therapeutic effect has been achieved. Conditions for waiver submission must include:
 1. Stable dose for at least three months
 2. No or minimal side effects
 3. Normal serum glucose and uric acid levels while on the therapeutic dose
 4. Serum glucose and uric acid 6 months after initiation
 5. LFTs every 6-12 weeks for the first year and then every 6 months thereafter (<1% incidence of elevated LFTs, possibility of fulminant hepatic necrosis)

ANTIHYPERTENSIVES: (See [Hypertension APL](#)) Waivers are recommended for medication class, not individual medications. Use of any of these drugs requires a 3 day (6 readings) blood pressure check and laboratory values as indicated for each medication class. A current (within 90 days) set of laboratory results is required on the annual FDME/FDHS.

- **Ace Inhibitors :** CAPTOPRIL (Capoten), ENALAPRIL (Vasotec), LISINOPRIL (Zestril), BENAZEPRIL (Lotensin), FOSINOPRIL (Monopril), QUINAPRIL (Accupril), RAMIPRIL (Altace), TRANDOLOPRIL (Mavik), MOEXIPRIL (Univasc). Required labs: Chem-7 in first 7 to 10 days of therapy to evaluate effect on BUN, creatinine and

Potassium levels and then this will be required every 3 months for the first year of therapy, followed by annual reporting of these levels on FDME/FDHS.

- **Angiotensin II Receptor Blockers:** LOSARTAN (Cozaar), VALSARTAN (Diovan), IRBESARTAN (Avapro), CANDARSARTAN (Atacand). ACE-I and ARB in combination with approved diuretics may be used.
- **Alpha Blockers:** PRAZOSIN (Minipress), DOXAZOSIN (Cardura), TERAZOSIN (Hytrin).
- **Calcium Channel Blockers:** AMLODIPINE (Norvasc) can be waived. All other medications in this class are considered Class 4.
- **Diuretics:** Thiazide, Potassium-sparing, and combinations. Required labs: Thiazide use requires annual serum glucose, BUN, creatinine, and serum uric acid. Thiazides may alter serum cholesterol and triglycerides; therefore, monitor lipid profile after 6 months of therapy and then annually. Use of any potassium sparing diuretic requires serum potassium level every 6 months. TRIAMTERENE (Dyrenium) requires platelet count and CBC with differential every 6 months.

ANTI-INTRAOCULAR HYPERTENSION/GLAUCOMA AGENTS:

ACETAZOLAMIDE (Diamox): Must be free of side effects for 48 hours before resuming flying duties. Check for alterations in potassium and uric acid early in the treatment program. Must submit CBC, platelet count, and serum electrolytes with annual FDME.

BETAXOLOL (Kerlone), DIPIVERIN (Propine), LEVOBUNOLOL (Betagan), TIMOLOL (Timoptic), DORZOLAMIDE (Trusopt), LATANOPROST (Xalatan).

HORMONAL PREPARATIONS: Class 3 medications unless specified otherwise below.

Chronic use of any systemic steroid (i.e. PREDNISONE) requires monitoring of liver functions every 6 months for the first year and annually thereafter. Lipid profile required annually for systemic steroids. Report on annual FDME.

- **Clomiphene Citrate (Clomid):** Documentation of infertility evaluation required. Must be free of side effects for 24 hours before resuming any aviation duties. See systemic steroid requirement.
- **Estrogen/Progestin Preparations:** Class 2A medication when used solely for contraception or hormonal replacement following menopause or hysterectomy. Class 3 when used for any other condition. See systemic steroid requirements above.
- **Finasteride (Proscar):** See systemic steroid requirements above. Document improvement in both objective and subjective signs for prostate hyperplasia on annual FDME. Document annual digital rectal exam on FDME.
- **Intranasal Steroid Preparations:** (See [Class 2A Agents APL](#))
- **Orally Inhaled Steroid Preparations:** BECLOMETHASONE (Vanceril, QVAR), FLUNISOLIDE (AeroBid, AeroBid-M), FLUTICASONE (Flovent), TRIAMCINOLONE (Azmacort), and BUDESONIDE (Rhinocort) inhalers may be approved. Full aeromedical summary with justification for use required.
- **Testosterone:** DITATE, TESTAVAL have been approved. See systemic steroids for requirements. Full aeromedical summary with justification for use is required.
- **Thyroid Preparations:** LEVOTHYROXINE (Synthroid, Unithyroid, Levoxyl) is an acceptable treatment. Requires annual submission of complete thyroid function and ophthalmology evaluation.

MISCELLANEOUS AGENTS/TREATMENTS: Class 3 medications unless otherwise indicated. Appropriate medical evaluation is required. Waivers have been granted for each of the following agents under the appropriate circumstances and conditions.

- **Allopurinol:** Annual CBC, BUN, creatinine, serum calcium and uric acid required with FDME.
- **B12 Injections:** Annual CBC with indices, serum folic acid, and reticulocyte count required with FDME.
- **Botulinum Toxin**
- **Desensitization Therapy/Injections:** must be grounded for 12 hours.
- **Folic Acid:** Annual CBC with indices.
- **Hydroxychloroquine sulfate:** CBC, complete neuromuscular examination, and complete ophthalmologic exam are required on annual FDME.
- **Iron Supplements:** Monitor and report serum ferritin and serum iron concentrations. Also report reticulocyte count and total iron binding capacity with annual FDME.
- **KCL Supplements:** Annual ECG, serum potassium, BUN, creatinine, and serum magnesium required with FDME.
- **Metformin (Glucophage):** (See [Diabetes APL](#))
- **Mesalamine (Rowasa, Asacol, Pentasa):** BUN, creatinine, and urinalysis required annually with FDME. Proctoscopy and/or sigmoidoscopy as indicated.
- **Beta 2 Agonists:** METAPROTERENOL (Alupent), TERBUTALINE (Brethaire), ALBUTEROL (Proventil; Ventolin), SALMETEROL (Serevent), BITOLTEROL (Tornalate), PIBUTEROL (Maxair), ISOPROTERENOL (Isuprel), and FORMOTEROL (Foradil). Inhaled use only. Waivered only on a case-by-case basis. Monitor PFTs.
- **Olsalazine (Dipentum):** CBC required every 6 months. BUN, serum creatinine, and urinalysis required annually with FDME. Proctoscopy and/or sigmoidoscopy as medically indicated.
- **Pentoxifylline (Trental)**
- **Probenecid (Benemid):** Serum uric acid, 24-hour urinary uric acid, BUN, and creatinine clearance are required with annual FDME.
- **Prophylthiouracil (Propyl-Thyracil):** CBC and thyroid function test (TFT) are required annually.
- **Sulfasalazine (Azulfidine):** CBC required every 6 months. Proctoscopy and/or sigmoidoscopy as medically indicated.

Class 4: Use of these medications necessitates grounding the aviator and is not waivable for flying duty.

AEROMEDICAL CONCERNS: Use of certain medications is strictly contraindicated in the aviation environment due to significant side effects. The underlying cause or need for use of these medications may result in a permanent disqualification or require a waiver for return to flying duty.

WAIVERS: A period of continuous grounding is mandatory from the initiation of therapy through cessation of these drugs plus a specified time period to rid the drug completely from the

body (usually at least three half lives). Continuous use of these medications is incompatible with continuation of aviation status. Waiver is not recommended.

- **ALCOHOL:** Requires 12 hours of flight restriction following termination of use with no residual effects.
- **NON-ALCOHOLIC BEER:** Require 12 hours of flight restriction following termination of use with no residual effects.
- **ANABOLIC STEROIDS (other than medically indicated Testosterone treatment of an appropriately defined deficiency, see Class 3):** Waiver is not recommended.
- **ANTI-ARRHYTHMICS:** Waiver is not recommended.
- **ANTI-DEPRESSANTS:** Waiver is not recommended.
- **ANTI-MIGRAINE AGENTS:** Waiver is not recommended.
- **ANTI-PSYCHOTICS:** Waiver is not recommended.
- **ANTI-VERTIGO AGENTS:** Waiver is not recommended.
- **ANTI-CONVULSIVES:** Waiver is not recommended.
- **ANTI-HISTAMINES (sedating and semi-sedating, including Cetirizine (Zyrtec)).** Waiver is not recommended for this medication; see other medication policy letters and Allergic/Nonallergic Rhinitis APL for acceptable medications.
- **BETA BLOCKERS:** ATENOLOL (Tenormin), METOPROLOL (Lopressor, Toprol), PROPRANOLOL (Inderal). CD for all aviation personnel classes. Aviation personnel using Beta-blockers should be transitioned to a waiverable anti-hypertensive. Waiver is not recommended.
- **BARBITURATES, MOOD AMELIORATING, TRANQUILIZING, OR ATARAXIC DRUGS:** Requires 72 hour flight restriction following termination of treatment. The half-life of Phenobarbital is 2-5 days. Waiver is not recommended.
- **CALCIUM CHANNEL BLOCKERS:** VERAPAMIL (Calan), NIFEDIPINE (Procardia), and DILTIAZEM (Catapres) are prohibited. Waiver is not recommended with the exception of AMLODIPINE (Norvasc), which may be approved.
- **CLONIDINE:** Waiver is not recommended.
- **COUGH PREPARATIONS WITH DEXTROMETHORAPHAN, CODEINE, OR OTHER CODEINE-RELATED ANALOGS:** Require 24 hours of flight restriction following termination of treatment.
- **DEA SCHEDULED MEDICATIONS:** Waiver is not recommended.
- **DIET AIDS:** Waiver is not recommended.
- **HYPOGLYCEMIC AGENTS:** CHLORPROPAMIDE (Diabinese), GLIPIZIDE (Glucotrol, Glucotrol XL), GLYBURIDE (Micronase, Diabeta, Glynase), TOLBUTAMIDE (Orinase), TOLAZIMIDE (Tolinase), ACETOHEXAMIDE (Dymelor), GLIMEPIRIDE (Amaryl).
- **HYPNOTICS:** Waiver is not recommended.
- **INSULIN:** Waiver is not recommended.
- **ISOTRETINOIN:** (Accutane) Waiver is not recommended.
- **LOOP DIURETICS:** Waiver is not recommended.
- **MINOCYCLINE:** (Minocin) Waiver is not recommended.
- **MOTILITY ENHANCING AGENTS:** Metoclopramide (Reglan), Waiver is not recommended.

- **NARCOTICS:** Waiver is not recommended.
- **QUININE, BITTERS, TONIC WATER:** Requires 72 hour flight restriction following termination of treatment when these formulations are used for medical conditions. Ingestion of tonic water or bitters on an infrequent basis does not require flight restriction.
SLEEPING AIDS: Requires 24 hours of restriction after use. (See Predeployment drugs).
- **ANTI-MIGRAINE SEROTONIN (5HT) RECEPTOR AGONISTS:** SUMATRIPTAN (Imitrex), NARATRIPTAN (Amerge), RIZATRIPTAN (Maxalt; Maxalt-MLT), ZOMITRIPTAN (Zomig; Zomig ZMT), Almotriptan (Axert). Requires 12 hours of flight restriction following termination of treatment.
- **TRANQUILIZERS:** Waiver is not recommended

Herbal Products, Dietary Supplements and Other OTC Agents

AEROMEDICAL CONCERNS: Most people in the United States use some form of complementary or alternative medicine (herbal remedies, homeopathic agents, supplements). Some of these agents may have benefits, most have uncertain benefits, and others are unsafe especially if taken in combination with medication or in certain work environments. The short term effects of some of these preparations are dangerous and use can result in sudden incapacitation in flight. The long term effects of many of these unregulated preparations are unclear and have not been studied to any degree in the aeromedical environment. Ascertaining the use of dietary supplements is an important aircrew safety issue. Aeromedical health care providers (FS/APA) need to research and provide information and education on dietary supplements to all aircrew. This aeromedical policy is to outline those products which may be viewed as non-harmful in limited doses and can be used in the aeromedical environment with the knowledge and monitoring of the FS/APA. Any preparation not clearly permitted for use per this policy is not authorized for flight.

WAIVERS: The majority of herbal and dietary preparations are prohibited for aviation duty as many are used in cases of self-diagnosis and self-treatment. In many cases, studies do not reveal significant clinical efficacy. Any herbal and dietary supplements being used will be entered on the FDME/FDHS. Herbal and dietary supplements are designated Class 1, 2, or 3.

Class 1: Individual aircrew may use the following supplements without prior approval of a flight surgeon. Any use, whether periodic or regular, must be reported on the annual FDME/FDHS:

- Single multivitamin/mineral tablet per day
- Vitamins C, E, B5, B6, B12 (oral)
- Calcium
- Folate
- Protein supplementation to include shakes, capsules, and nutritional bars, but they may only contain additives specifically approved as Class 1.
- Sports drinks which contain a mixture of carbohydrates, vitamins, and minerals and without creatine, ephedra, or other herbal supplements

Class 2: Individual aircrew may use the following supplements with prior approval of a flight surgeon. Any use, whether periodic or regular, or as part of beverages or other supplement

combinations must be reported on the annual FDME/FDHS: (NOTE: With use of these supplements by aircrew, the FS/APA needs to be concerned not only with the use and potential side effects of the supplement, but also with the underlying medical condition that the individual is treating.)

- Vitamins A, K, D, Niacin, Riboflavin, Thiamine
- Magnesium, Zinc, Chromium, Selenium, Copper
- Glucosamine with or without Chondroitin
- Echinacea for short term (less than two weeks) use
- Saw Palmetto
- Creatine monohydrate (without loading doses, max 5g/day intake)
- Ginseng- may be used but is prohibited 24 hours before flight

Class 3: All other preparations not specifically listed above are currently disqualifying for flight duties without review by the FS/APA and concurrence with AAMA. Again, it may not be the actual herbal or supplement, but the underlying condition that is of aeromedical concern. Waivers may be applied for on a case-by-case basis with an accompanying AMS discussing the underlying condition of concern and aspects of herbal/supplemental therapy.

INFORMATION REQUIRED: All aircrew and those applying for any form of aviation or aeromedical training will report the use of any form of dietary supplement to their FS/APA. The presence or absence of side effects should be noted.

FOLLOW-UP: Use of any form of dietary supplement will be addressed at each visit with the FS/APA to include the annual FDME/FDHS. Any side effects of use must be documented.

TREATMENT: The individual aircrew may be using these preparations for self-medication and should be carefully screened with regard to underlying medical problems. FS/APAs must educate themselves on the indications, use, and side effects of the preparations used by their aircrew. Use the references below to obtain information to assist in monitoring aircrew health.

REFERENCE: In this rapidly evolving area, check with your medical librarian for current references. Available internet references on this topic:

<http://dietary-supplements.info.nih.gov/>

Office of Dietary Supplements, National Institutes of Health at 1-301-435-2920.

<http://hprc-online.org/dietary-supplements>